MINISTRY OF EDUCATION

Republic of Ghana

TEACHING SYLLABUS FOR INFORMATION AND COMMUNICATIONS TECHNOLOGY (ELECTIVE)

(SENIOR HIGH SCHOOL 1-3)

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TEACHING SYLLABUS FOR INFORMATION AND COMMUNICATIONS TECHNOLOGY (ELECTIVE)

RATIONALE FOR TEACHING ICT (ELECTIVE)

This syllabus is designed to provide advanced skills in Information and Communications Technology (ICT) for Senior High School (SHS) students. It is expected that the knowledge and skills gained in this course will prepare students to pursue ICT courses in years ahead and provide them with the basic skills needed for the ICT job market. The syllabus covers selected topics in ICT which offer hands-on activities to help students acquire the required ICT skills.

GENERAL AIMS

The syllabus is designed to help the student to:

1. acquire advanced ICT literacy

2. develop enough interest to pursue ICT as a course at the tertiary level

3. acquire proficiency in the use of ICT tools

4. use ICT as a tool for learning other subjects

5. acquire the basic skills needed for the ICT job market

SCOPE OF CONTENT

This syllabus has been planned at a higher content level than the ICT content at the Core ICT level. This has been done to equip students with the necessary knowledge and skills for the job market and for pursuing further ICT course. The themes of this course are as follows:

➢ Information and Communications Technology
➢ Hardware
➢ Introduction to software development
➢ PC Hardware Maintenance and Software Installation
➢ Desktop Publishing Software and its functionality
➢ Word Processing
➢ Spreadsheet
➢ Introduction to Data Processing Systems
➢ Introduction to Programming
➢ Basic Networking
➢ Data Communications
➢ Introduction to Educational Technology

The twelve themes are to be covered in Years 1, 2 and 3 of Senior High School education.

STRUCTURE AND ORGANIZATION OF THE ELECTIVE ICT SYLLABUS

The structure of the elective ICT syllabus is presented on the next page

STRUCTURE AND ORGANISATION OF THE ELECTIVE ICT SYLLABUS

SHS 1	SHS 2	SHS 3
SECTION ONE **INFORMATION AND COMMUNICATIONS TECHNOLOGY IN EVERYDAY LIFE** Unit 1: Introduction to Information System Unit 2: Introduction to Digital Technology and Culture **SECTION TWO** **COMPUTER HARDWARE** Unit 1: Hardware Components. Unit 2: Primary and Secondary Storage Media and their Devices Unit 3: Data Representation **SECTION THREE** **COMPUTER SOFTWARE** Unit 1: Introduction to Computer Software Unit 2: Utility Programs Unit 3: Application Programs	**SECTION ONE** **SPREADSHEET** Unit 1: Editing Worksheet Unit 2: Formatting Worksheet Unit 3: Data Handling Unit 4: Data Security Unit 5: Using Function Unit 6: Basic Analysis **SECTION TWO** **INTRODUCTION TO DATA PROCESSING SYSTEMS** Unit 1: Concept, Principles and Terminologies of Database Application Unit 2: Creating a Database Unit 3: Managing Data in a Database Unit 4: Working with Queries Unit 5: Working with Forms Unit 6: Working with Reports, Unit 7: Designing a Class Database System	**SECTION ONE** **NETWORKING** Unit 1: Networking Concepts Unit 2: Types of Network Unit 3: Network Topology Unit 4: Network Transmission media Unit 5: Network Configuration Unit 6: Data communication Unit 7 Data Security and Control **SECTION TWO** **INTRODUCTION TO WEBSITE DESIGNING** Unit 1: Introduction to HTML. Unit 2: Basic HTML Tags. Unit 3: Designing Website Using HTML

SHS 1	SHS 2	SHS 3

SECTION FOUR
 	
PERSONAL COMPUTER HARDWARE MAINTENANCE AND SOFTWARE INSTALLATION
 	
Unit 1: Personal Computer (PC) Diagnostic and Maintenance
 	
SECTION FIVE
 	
USING ICT TO LEARN
 	
Unit 1: Technology in Education
• Concepts and Terminologies
 	
Unit 2: Multimedia in Education
	SECTION THREE
	
	INTRODUCTION TO PROGRAMMING
	
	Unit 1: Introduction to Programming Languages
	
	Unit 2: Features of Programming Languages
	
	Unit 3: Program Development Life Cycle
	
	Unit 4: Algorithms
	
	Unit 5: Flow Charts
	
	SECTION FOUR
	
	DESKTOP PUBLISHING APPLICATION
	
	Unit 1: Desktop Publishing Application Window
	
	Unit 2: Principles of Designing Publication
	
	Unit 3: Designing Publication
	
	Unit 4: Editing Publication
	
	Unit 5: Formatting Publication
	
	Unit 6: Printing Publication
		SECTION THREE
		
		SECTION FOUR
		
		PROJECT-BASED ACTIVITY
		
		Unit 1: Project Work:
		  - Desktop Publishing
		  - Database
		  - Programming - Website Designing

TIME ALLOCATION

A minimum of six (6) periods a week each of 40 minutes is recommended for teaching SHS Elective ICT (as shown in the table below). As per the teaching arrangements and SBA, it is expected that there will be 10 weeks for effective teaching per term. This results in 60 periods per term and subsequently180 periods per school year (1st and 2nd years). However due to the final exams in the third term of the third year, the there will be 120 periods for that year. **Appendix A** is a guide for allocation of periods to each unit.

CLASS	TOTAL NUMBER OF PERIODS PER WEEK
SHS 1	6
SHS 2	6
SHS 3	6

GENERAL OBJECTIVES

General Objectives have been listed at the beginning of each section of the syllabus. The general objectives specify the skills and behaviours the student should acquire after learning the units of a section. Read the general objectives very carefully before you start teaching. After teaching all the units, go back and read the general aims and general objectives again to be sure you have covered both of them adequately in the course of your teaching.

To make it user friendly, the syllabus has been structured into five columns. Column one is the Unit topic, Column two consists of the Specific Objectives of each units, Column three provides the content to be covered , Column four provides Teaching Learning Activities for the achievement of the Specific Objectives, while Column five provides some exercises that will be useful for assessing the knowledge and skills gained in the lesson.

COLUMN 1 - UNITS

This column presents the sub topics of the major topic(s) of the section. The unit topics have been arranged sequentially to facilitate skill building. However if a teacher finds at some point that teaching and learning in his/her class will be more effective if he/she skipped to another unit, he/she can do so and come back later to the unit.

COLUMN 2 - SPECIFIC OBJECTIVES

Column 2 shows the Specific Objectives for each unit. The specific objectives begin with numbers such as 1.3.5 or 2.2.1. These numbers are referred to as "Syllabus Reference Numbers". The first digit in the syllabus reference number refers to the section; the second digit refers to the unit, while the third digit refers to the rank order of the specific objective. For instance, 1.3.5 means: Section 1, Unit 3 (of Section 1) and Specific Objective 5. In other words, 1.3.5 refers to Specific Objective 5 of Unit 3 of Section 1. Similarly, the syllabus reference number 2.2.1 simply means Specific Objective number 1 of Unit 2 of Section 2. Using syllabus reference numbers provides an easy way for communication among teachers and other educators. It further provides an easy way for selecting objectives for test construction. Let's say for instance, that Unit 2 of Section 2 has five specific objectives: 2.2.1 - 2.2.5. A teacher may want to base his/her test items/questions on objectives 2.2.3 and 2.2.4 and not use the other three objectives. In this way, a teacher would sample the objectives within units and within sections to be able to develop a test that accurately reflects the importance of the various skills taught in class.

You will note also that specific objectives have been stated in terms of the student i.e., *what the student will be able to do after instruction and learning in the unit*. Each specific objective hence starts with the following, "The student will be able to." This in effect, means that you have to address the learning problems of each individual student. It means individualizing your instruction as much as possible such that the majority of students will be able to master the objectives of each unit of the syllabus.

COLUMN 3 - CONTENT
The "content" column of the syllabus presents a selected body of information, skills and competencies that you will need in teaching the particular unit.

COLUMN 4 - TEACHING AND LEARNING ACTIVITIES (TLA)
T/L activities that will ensure maximum student participation in the lessons are presented in Column four. You are encouraged to re-order the suggested teaching and learning activities and also add to them where necessary in order to achieve optimum student learning. As we have implied already, the major purpose of teaching and learning ICT is to make students acquire competent skills in ICT and use their skills in doing a variety of practical work and solve many ICT related problems.

COLUMN 5 - EVALUATION

Suggestions and exercises for evaluating the lessons of some units are indicated in Column 5. Evaluation exercises can be in the form of oral questions, quizzes, class exercises and assignments, project work etc. Try to ask questions and set tasks and assignments that will challenge your students to apply their knowledge and skills to issues and problems. The suggested evaluation tasks are not exhaustive. You are encouraged to develop other creative evaluation tasks to ensure that students have mastered the skills implied in the specific objective(s) of each unit. For evaluation during class lessons, determine the mastery level you want students to achieve in their answers and responses. If for instance, you take 80% as the mastery level, ensure that each student's answer to questions asked in class achieve this level of mastery.

PROFILE DIMENSIONS

A 'dimension' is a psychological unit for describing a particular learning behaviour. More than one dimension constitutes a profile of dimensions. A specific objective as follows, "The student will be able to describe…etc.", contains an action verb, "describe" that indicates what the student will be able to do after teaching and learning had taken place. Being able to "describe" something after the instruction has been completed means that the student has acquired "knowledge". Being able to explain, summarise, give examples etc. means that the student has understood the lesson taught. Similarly, being able to develop, plan, construct etc. means that the student has learnt to create, innovate or synthesize knowledge. You will note that each of the specific objectives in this syllabus contains an "action verb" that describes the behaviour the student will be able to display after the instruction. "Knowledge", "Application" etc. are dimensions that should be the prime focus of teaching and learning in schools. Instruction in most cases has tended to stress knowledge acquisition to the detriment of other higher level behaviours such as application, analysis etc. Each action verb indicates the underlying profile dimension of each particular specific objective. Read each objective carefully to know the profile dimension toward which you have to teach.

ICT is a practical subject and the learning required is best achieved by application of the skills learnt. The profile dimensions required in Elective ICT at the SHS level are as follows:

Knowledge and understanding	10%
Application of knowledge	30%
Practical Skills	60%

At the ICT Elective level, students should be involved in solving practical problems using the various ICT techniques they have learnt. The practical skills dimension has therefore been given a weight of 60%.

The explanation of the key words involved in each of the profile dimensions is as follows:

Knowledge and Understanding (KU)

knowledge	The ability to: remember, recall, identify, define, describe, list, name, match, state principles facts and concepts. Knowledge is simply the ability to remember or recall material already learned and constitutes the lowest level of learning.
understanding	The ability to: explain, summarise, translate, rewrite, paraphrase, give examples, generalise, estimate or predict consequences based upon a trend. Understanding is generally the ability to grasp the meaning of some material that may be verbal, pictorial, or symbolic.

Use of Knowledge (UK)

The ability to use knowledge or apply knowledge, as implied in this syllabus, has a number of learning/behaviour levels. These levels include application, analysis, synthesis, and evaluation. These may be considered and taught separately, paying attention to reflect each of them equally in your teaching. The dimension "Use of Knowledge", is a summary dimension for all four learning levels. Details of each of the four sub levels are as follows:

application	The ability to: apply rules, methods, principles, theories, etc. to concrete situations that are new and unfamiliar. It also involves the ability to produce, solve, operate, plan, demonstrate, discover etc.
analysis	The ability to: break d own a piece of material into its component parts; to differentiate, compare, distinguish, outline, separate, identify significant points etc., recognise unstated assumptions and logical fallacies, recognize inferences from facts etc. Analytical ability underlies discriminative thinking.
innovation/creativity	The ability to: put parts together to form a new whole, a novel, coherent whole or make an original product. It involves the ability to synthesize, combine, compile, compose, devise, construct, plan, produce, invent, devise, make, program, film, animate, mix, re-mix, publish, video cast, podcast, direct, broadcast, suggest (an idea, possible ways), revise, design, organize, create, and generate new ideas and solutions. The ability to create or innovate is the highest form of learning. The world becomes more comfortable because some people, based on their learning, generate new ideas, design and create new things.
evaluation	The ability to: appraise, compare features of different things and make comments or judgement, contrast, critique, justify, hypothesize, experiment, test, detect, monitor, review, post, moderate, collaborate, network, refractor, support, discuss, conclude, make recommendations etc. Evaluation refers to the ability to judge the worth or value of some material based on some criteria and standards. We generally compare, appraise and select throughout the day. Every decision we make involves evaluation. Evaluation is a high level ability just as application, analysis and innovation or creativity since it goes beyond simple knowledge acquisition and understanding.

The action verbs provided under the various profile dimensions and in the specific objectives of the syllabus should help you to structure your teaching such as to achieve the effects needed. Select from the action verbs provided for your teaching, in evaluating learning before, during and after the instruction. Use the action verbs also in writing your test questions.

A number of examination questions at the secondary school level begin with the word "Discuss". Discuss belongs to the evaluation thinking skill and implies the ability to analyze, compare, contrast, make a judgment etc. The word "discuss" asks for a variety of thinking skills and is obviously a higher order thinking behaviour. Students consequently do poorly on examination questions that start with "Discuss". For this reason, and also for the reason that discussion of issues, discussion of reports etc., are some of the major intellectual activities students will be engaged in, in work situations and at higher levels of learning after they have left secondary school, it will be very helpful if teachers would emphasize discussion questions etc. both in class and in the tests you set.

Teachers should note that the emerging trend in ICT learning is to refer to Bloom's Digital Taxonomy. For more information on this phenomenon refer to Appendix

PRACTICAL SKILLS

Practical skills involve demonstration of manipulative skills using equipment and materials to carry out practical operations for solving problems. The teaching and assessment of practical skills should involve projects and creative practical tasks. Skills required for effective practical work include:

HANDLING EQUIPMENT/MATERIALS:
The learner should be able to handle and use of ICT equipment and materials efficiently.

OBSERVATION
The learner should be able to use the senses to make accurate observation of skills and techniques during teacher demonstrations. The learner should be able to apply the techniques observed for performing other tasks.

PERCEPTION
The learner should be able to coordinate most of the senses (touch, feel, sight etc) for every project or task undertaken.

COMMUNICATION
The learner should be guided to develop effective oral and written communication skills necessary for work production.

COMMITMENT
The learner should be encouraged to uphold ethical standards in the use of technology e.g. netiquette

FORM OF ASSESSMENT

The assessment of ICT should be based on more practical work than theory. In developing assessment procedures, try to select specific objectives in such a way that you will be able to assess a representative sample of the syllabus objectives. Each specific objective in the syllabus is considered a criterion to be achieved by the students. The assessment procedure you use, i.e. class tests, homework, projects etc. must be developed in such a way that it will consist of a sample of the important objectives taught over a period.

The assessment of ICT will be based on two examination papers: Papers 1 and 2, and the SBA.
Paper 1 will test practical skills and will carry 120 marks.

Students will be expected to solve **high order thinking** problems using the following;

- Information and Communications Technology
- Word Processing
- Desktop Publishing Software and its functionality
- Spreadsheet
- Hardware
- Introduction to software development
- PC Hardware Maintenance and Software Installation
- Data Communications
- Basic Networking
- Introduction to Data Processing Systems
- Introduction to Programming
- Introduction to Educational Technology

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Paper 2 will be in two sections: Section A and B. Section A will consist of 40 compulsory multiple choice items carrying 40 marks; Section B will comprise six (6) questions out of which students will answer four (4). One of the four questions should be the compulsory question which carries 20 marks. The remaining three questions will carry 10 marks each.

Note that the difference between the core ICT and the elective ICT will be in the quality and level of the questions/assignments set for the two. The structure of the examination paper, their mark allocation and profile dimension weights are indicated in the table below.

DISTRIBUTION OF EXAMINATION PAPER WEIGHTS AND MARKS

Dimensions	Paper 1	Paper 2		SBA	Total Marks	% Weight of Dimensions
		Section A: Multiple Choice	Section B: Essays			
Knowledge and Understanding	-	20	10	-	30	10
Application of Knowledge	-	20	40	30	90	30
Practical Skills	120	-	-	60	180	60
Total Marks	**120**	**40**	**50**	**90**	300	-
% Contribution of Examination Papers	40	13	17	30		100

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GUIDELINES FOR SCHOOL-BASED ASSESSMENT (SBA)

A new School Based Assessment system (SBA) will be introduced into the school system in 2011. The new SBA system is designed to provide schools with an internal assessment system that will help schools to achieve the following purposes:

o   Standardize the practice of internal school-based assessment in all Senior High Schools in the country
o   Provide reduced assessment tasks for subjects studied at SHS
o   Provide teachers with guidelines for constructing assessment items/questions and other assessment tasks
o   Introduce standards of achievement in each subject and in each SHS class
o   Provide guidance in marking and grading of test items/questions and other assessment tasks
o   Introduce a system of moderation that will ensure accuracy and reliability of teachers' marks
o   Provide teachers with advice on how to conduct remedial instruction on difficult areas of the syllabus to improve class performance.

The arrangement for SBA may be grouped in categories as follows: Project, Mid-Term test, Group Exercise and End of Term Examination.

Project: This will consist of a selected topic to be carried out by groups of students for a year. Segments of the project will be carried out each term toward the final project completion at the end of the year, The project may consist of

      i)   Investigative study
      ii)   Practical work
      iii)   Case Study

Mid-Term Test: The mid-term test following a prescribed format will form part of the SBA

Group Exercise: This will consist of written assignments or practical work on a topic(s) considered important or complicated in the term's syllabus

End-of-Tem Examination: The end-of-term test is a summative assessment system and should consist of the knowledge and skills students have acquired in the term. The end-of-term test for Term 3 for example, should be composed of items/questions based on the specific objectives studied over the three terms, using a different weighting system such as to reflect the importance of the work done in each term in appropriate proportions. For example, a teacher may build an End-of-Term 3 test in such a way that it would consist of the 20% of the objectives studied in Term 1, 20% of objectives studied in Term 2 and 60% of the objectives studied in Term 3.

GRADING PROCEDURE

To improve assessment and grading and also introduce uniformity in schools, it is recommended that schools adopt the following WASSCE grade structure for assigning grades on students' test results. The WASSCE structure is as follows:

Grade A1:   80 - 100%   -   Excellent
Grade B2:   70 - 79%   -   Very Good
Grade B3:   60 - 69%   -   Good
Grade C4:   55 - 59%   -   Credit
Grade C5:   50 - 54%   -   Credit
Grade C6:   45 - 49%   -   Credit
Grade D7:   40 - 44%   -   Pass
Grade D8:   35 - 39%   -   Pass
Grade F9:   34% and below -   Fail

In assigning grades to students' test results, you are encouraged to apply the above grade boundaries and the descriptors which indicate the meaning of each grade. The grade boundaries i.e., 60-69%, 50-54% etc., are the grade cut-off scores. For instance, the grade cut-off score for B2 grade is 70-79% in the example. When you adopt a fixed cut-off score grading system as in this example, you are using the criterion-referenced grading system. By this system a student must make a specified score to be awarded the requisite grade. This system of grading challenges students to study harder to earn better grades. It is hence a very useful system for grading achievement tests.

Always remember to develop and use a marking scheme for marking your class examination scripts. A marking scheme consists of the points for the best answer you expect for each question, and the marks allocated for each point raised by the student as well as the total marks for the question. For instance, if a question carries 20 marks and you expect 6 points in the best answer, you could allocate 3 marks or part of it (depending upon the quality of the points raised by the student) to each point , hence totaling 18 marks, and then give the remaining 2 marks or part of it for organization of answer. For objective test papers you may develop an answer key to speed up the marking.

SENIOR HIGH SCHOOL - YEAR ONE

BASIC ICT CONCEPTS

General Objective(s): The student will:
1.   understand the basic concepts of ICT and information processing cycle.
2.   appreciate the impact of ICT on everyday life

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION

UNIT 1
 	
INTRODUCTION TO INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)
	The student will be able to:
	
	1.1.1 explain the concept of ICT and its related terminologies.
	
	1.1.2 describe the information processing cycle.
		Definition of ICT, related basic concepts and terminologies e.g.
		• Information and Communications Technology (ICT)
		• Information and Communication Technologies (ICTs)
		• Data
		• Information
		• e-Learning
		
		Information Processing Cycle
		
		Stage 1 - Receiving data
		                   (Input operation)
		
		Stage 2 - Processing data
		(Processing operation)
		
		Stage 3 - Display information
		                   (Output operation)
		
		Stage 4 - Storing information
		                   (Storage operation)
			Let students brainstorm and come out with the meaning of ICT and its related terminologies.
			
			Students to brainstorm and come out with the differences between:
			• data and information.
			• ICT and ICTs
			
			Use a simple diagram to illustrate how data is processed into information and stored for future use.
				Exercise
				Students to explain some of the basic ICT concepts and terminologies and show the differences e.g.
				• ICT and ICTs
				• Data and Information
				
				Exercise
				Students to list the devices used in the stages of information processing cycle and describe what goes on at every stage of the cycle.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 (CONT'D) **INTRODUCTION TO INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)**	The student will be able to: 1.1.3 Identify the various devices used in the Information Processing Cycle	**Devices Used in the Information Processing Cycle** - Input devices - keyboard, mouse, microphone, scanner -Processing devices – CPU Such as Celeron, Pentiums AMD, MC68040 etc. -Output devices - printer, monitor, speakers, LCD Projector -Storage devices and media – hard disk drive – hard disk CD/DVD drive – CD, DVD ROM etc.	Guide students to discuss the various devices at each stage within the information processing cycle.	**Assignment:** Select ICT career of your choice and find out the requirements and job description and report in class.
	. 1.1.4 analyse the impact of ICT on educational, social and economic development.	**Impact of ICT on Educational, Social and Economic Development** • Research work • Advertisement • Effective communication	. In groups students to discuss and come out with the impact of ICT on Educational, Social and Economic development.	
	1.1.5 identify career opportunities in ICT education.	**Career Opportunities** • Systems Administrator • Programmer • Database administrator • Network administrator etc. • ICT Consultant • ICT Coordinators • Production Planning • Office work etc.	Discuss the various career opportunities with students or invite resource persons to discuss the various opportunities.	
UNIT 2 **INTRODUCTION TO COMPUTERS**	1.2.1 describe the uses of the components of computer system	**The Components of the Computer System** • Hardware • Software • User (liveware) • Procedure (i.e. interaction between the user and the computer)	In groups students should brainstorm and report on the components of computer system.	

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UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION

UNIT 2 (CONT'D)
 	
INTRODUCTION TO COMPUTERS
	The student will be able to
	
	1.2.2 Differentiate among the classes of computers.
		Classification of Computers
		• Capacity and size
		  - Supercomputer,
		  - Mainframe computer
		  - Microcomputer etc.
		• Purpose
		  - General purpose
		  - Specific purpose
		• Type
		  - Digital
		  - Hybrid
		  - Analog
			Students to brainstorm and come out with the classification of computers.
			
			NB:
			Teacher to display real object/pictures of computers.
				Assignment:
				Put the following computers under their respective classification
				• Traffic light
				• Laptop Computers
				• Barometre
				• Desktop computers

	1.2.3 State the uses of computers	**Uses of Computers** • accept data, process data, give information and store data or information. • enhance teaching/learning, • produce documents etc	In small groups, students discuss and report on the uses of computers.	
	1.2.4 boot, reboot and shutdown computer correctly.	**Booting, Rebooting and Shutting Down of Computer** • Booting is the act of putting on the computer. • Rebooting is the act of restarting the computer. • Shutting down is the act of putting off the computer.	Discuss and demonstrate how to boot, re-boot and shut down a computer correctly. Stress on the correct procedure e.g. Close running Application and use the start menu button to shut down. Explain when reboot is necessary. Students to practice booting, rebooting and shutting down of computer.	**Assignment** : Differentiate between booting and rebooting.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 (CONT'D) **INTRODUCTION TO COMPUTERS**	The student will be able to: 1.2.5 identify possible threats to computers and users.	**Threats to Computers and Users** • Natural: e.g. heat, floods etc. • Human; e.g. viruses, worms, dust, liquids etc. • Health Hazards to Computer Users **–** bad posture , poor vision, wrist pain etc	Brainstorm and discuss the possible threats to computer and their users	**Assignment** Write down the causes, effects and prevention of threats to computers and their users.
	1.2.6 discuss the causes and effects of the threats	**Causes and effects of threats to computers and Users** • Viruses – Loss of data and software • Power fluctuation, Heat, fire etc. – damage to hardware • Light rays – poor vision of the user • Unauthorised Users – information theft, piracy etc.	Guide students to come out with the causes and effects of threats to computers and users. Take students on a field trip to two or three places to find out and report on : - Different classes of computers and their uses. - Threats to computers and their users	
	1.2.7 demonstrate the responsible use of computers.	**Responsible Use of Computers** • Computer ethics e.g. copyright, privacy concerns • Rules and regulations for proper use of computer labs.	Discuss the responsible use of computers. Students to come out with their own rules and regulations for responsible use of computers.	

SECTION TWO

HARDWARE AND SOFTWARE
General Objective: The student will:

1. recognise the different types of hardware and software and their uses.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 **COMPUTER HARDWARE**	The student will be able to: 2.1.1 identify the vital components of the Systems Unit.	**The Vital Components of the Systems Unit** e.g. ● Front Side: power switch light indicators, floppy and CD ROM drive etc. ● Back side: USB ports, serial ports, power socket, ● Inside: motherboard, CPU, power supply, memory, hard disk, cards(e.g. sound, network)	Open up a system unit and help students to identify and describe the vital components of the systems unit.	**Exercise :** Prepare a chart showing the classification of fixed and removable data storage devices
	2.1.2 describe the categories of Computer Hardware.	**Categories of the Computer Hardware**: ● Input devices ● Processing devices ● Output devices ● Storage devices. ● Communication devices	With the help of a computer, assist students to identify and describe the categories of the computer hardware. Guide students to differentiate between parts (monitor, keyboard, system unit, mouse) of a computer and the categories of computer hardware	**Exercise :** State the hardware categories and give two examples each.

	2.1.3 describe the commonly used Input and Output devices	**Input and Output Devices**
		● Input devices - Keyboard, Mouse scanner, joystick,
		          trackball, bar code
		          reader etc.
		● Output devices – Monitors, Printers(LaserJet and
		          DeskJet), speakers,
		          LCD projectors etc.
			Discuss the commonly used input and output devices and their functions	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION

UNIT 1 (**CONT'D)**
COMPUTER
HARDWARE
(**CONT'D)**
	The student will be able to:
	2.1.4 identify the main
	        processing devices
		Main Processing devices
		The Processor
		  • Control Unit and
		  • Arithmetic and Logic Unit
		Main memory (RAM)
			Lead students to discuss the main processing devices and their functions	

	2.1.5 identify the main types of
	        storage devices and
	        media.
		Types of Storage Devices and Media
		    Devices
		  • CD/ DVD drive, floppy
		    diskette drive, hard disk
		    drive, etc.
		
		    Media
		  • CD/DVD ROM, floppy disk,
		    flash memories, etc.
			Display the main types of storage devices and media and assist students to identify and discuss them.	

	2.1.6 Identify the main
	        communication devices
		Types of Communication Devices
		e.g.
		  • Telephone line
		  • Modem
		  • Satellite dish
			Display communication devices and assist students to identify and discuss them.	

UNIT 2
COMPUTER
SOFTWARE
	2.2.1 identify types of
	        Software packages.
		Types of Software Packages
		  • System software.
		    e.g. Operating system
		    software
		  • Application Software
		    e.g. Word Processing,
		    Spreadsheet
			Lead students to discuss the types of software packages.	**Exercise**
				Outline the differences between operating system and an application software

	2.2.2 Distinguish between
	        Operating System and
	        Application software.
		Differences between Operating System and Application software
		e.g.
		<table><tr><td>Operating System</td><td>Application software</td></tr><tr><td>Allows the computer hardware to become functional etc.</td><td>Allows user to perform specific function/task etc.</td></tr></table>
			Students to discuss and come out with the differences between Operating System and Application software.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 COMPUTER SOFTWARE (CONT'D)	The student will be able to: 2.2.3 identify different types, examples and uses of Operating System and Application software	**Types and uses of Operating System and Application software** Operating System .e.g. • Operating Systems e.g. DOS, Windows, (windows 98, 2000, ME, XP, Vista, Windows 7) Linux, Unix, Ubuntu, Macintosh etc. Application Software e.g. • Word-processing: WORD and Star Word, Writer, • spreadsheets: EXCEL, Lotus 123, Calc • Databases: Access, Base • Presentation: PowerPoint, Impress • Educational: Microsoft Encarta, Mavis Beacon • Games: solitaire, pinball • Browsers: Opera, Internet explorer, Mozilla Firefox • Authoring: Dream weaver, FrontPage, • Graphics: Corel Draw, • Desktop Publisher – Page Maker, Publisher	Lead students to discuss types, examples and uses of System and Application software. e.g. Word Processing - document creation. Database - Storing, sorting and retrieving large amount of data. Presentation: Presenting information in a number of attractive formats etc.	
	2.2.4 distinguish between Open Source and Proprietary Software.	**Differences Between Proprietary and Open Source Software** 	Proprietary	Open Source
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-It is licenced	-Freely distributed for use.
-Program Source Codes cannot be modified	-Program Source Codes can be modified		In groups, students discuss and distinguish between Open Source and Proprietary Operating Systems. Assist students to practise how to launch Applications.	**Exercise:** State the principles underlying: Open Source and Proprietary Software

SENIOR HIGH SCHOOL - YEAR 1

SECTION THREE

TYPING SPEED DEVELOPMENT

General Objective: The student will:

1. improve typing speed

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 **KEYBOARDING AND MOUSE SKILLS REVIEW**	The pupil will be able to: 3.1.1. type 25 – 30 words per minute.	Improving Speed and Accuracy in Typing Using a Typing Software: e.g. • Typing Tutor or Mavis Beacon	Students use the drills in the typing software to improve upon their speed and accuracy. **NOTE:** Teacher should insist on the use of the correct fingers on the keys in typing.	
	3.1.2 use mouse skills in document creation.	Using Mouse Skills in Document Creation.	Guide students to practise mouse skills e.g. Single clicking, Double clicking, Right click, Drag hold and drop in document creation.	**Exercise:** Students to create and reproduce a given document involving alpha and numeric keypad
	3.1.3 use the numeric keypad.	Using the Numeric Keypad	Assist students to use the numeric keypad. Let students use the drills in Typing Tutor or Mavis Beacon to do more practise on the numeric keypad	

SENIOR HIGH SCHOOL - YEAR 1

SECTION FOUR

WORD PROCESSING APPLICATION

General Objectives: The student will:

1. acquire basic skills in creating a document in Word Processing.
2 .format and edit document in a word processing document

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 **INTRODUCTION TO WORD PROCESSING APPLICATION**	The student will be able to : 4.1.1 identify Word Processing packages. .	**Word Processing Packages and their Uses** e.g. <u>Packages</u> • Microsoft Word • Writer • WordPad • Text Editor • Star Word <u>Uses</u> letters, memos, reports	Lead students to discuss and come out with examples of Word Processing packages Discuss the importance and uses of Word Processing Packages Guide students to revise the major features of the Word Processing software Guide students to discuss and come out with the importance of Word Processing .	
	4.1.2 create a document using the Word Processor.	**Creating Document Using a Word Processor**	Student to type a passage using Word Processing application	**Exercise:** **T**ype a letter, save with your name.
	4.1.3 save a document using the 'Save As' command.	**Saving Document Using the 'Save As' command**	Student to save the typed document using the 'Save As' command. Guide students to differentiate between "Save As" and "Save" command	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 **EDITING TEXT IN WORD PROCESSING DOCUMENT**	The student will be able to: 4.2.1 edit, and save Word document using common editing tools.	**Editing Word Document Using Common Editing Tools**: • Spell check functions • Copy/cut and paste facilities • OVR • Undo and redo keys • Search and replace	Students to type a given document, edit and save using the given editing and formatting tools. NOTE: Teacher should stress on saving document when working to avoid losing document when power goes off.	**Exercise:** Students to type and edit documents using the common editing tools
	4.2.2 create a document with more sub headings and paragraphs	Creating Document with More Sub-Headings and Paragraphs	Students type a 2 – 3 page document with more sub headings and paragraphs and save	Give student a 3-page document containing more sub heading and paragraphs to type and save.
	4.2.3 edit text using variety of options.	**Editing Text Using Variety of Options such** as: - • Text effects options – superscript, subscript, shadow, strikeout etc. • Text correction option • Wrapping options • Text orientation	Discuss the variety of options stated in the content column. Students apply the different options to edit the typed document.	NOTE: Teacher could time students and use this exercise as a speed test
	4.2.4 edit paragraph using paragraph options	**Editing Paragraph-Apply the Use of**: • Paragraph shading option • Border option • Orphan control to paragraph • Create an new character paragraph style • Modify existing paragraph • Outline option	Guide students to edit paragraphs in the document created applying the use of the paragraph options.	**Exercise:** Students to type document using different variety options

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	The student will be able to:			
UNIT 3 **FORMATTING WORD PROCESSING DOCUMENT**	4.3.1 format Word document using formatting tools.	**Formatting and saving a Word document using the formatting tools**: • Change font (style, size, colour etc) • Text alignment • Numbers and bulleting • Bold • Underline • Italics • Line spacing Change case etc	Students open an existing document format and save using the given formatting tools in the content column	**Assignment:** Assign students to create document, insert tables, symbols, pictures, save and print.
	4.3.2 demonstrate the ability to perform collaborative editing.	**Collaborative Editing e.g.** • Using highlighting option to track changes in a document • Accepting or rejecting changes • Adding text comments:	Students to open existing document (3-5page document) Teacher to demonstrate how to perform collaborative editing fro students to practise e.g. .Adding text comments: 1. Position the cursor at where the comment will appear 2. Click on **Insert menu** 3. Click **Comment** (a red line will appear at where the cursor is. A box will also appear at the end of the red line). 4. Type comment in the box. 5. Edit comments 6. Add or Remove comments	**Exercise** Students to add comments, a header and footer in the previous document created for teachers to assess
UNIT 4 **INSERTING TABLES AND SYMBOLS IN WORD PROCESSING DOCUMENT**	4.4.1 insert tables in Word Processing document.	**Inserting Tables in Word Document.**	Guide students to practise working with tables in Word document.	
	4.4.2 insert symbols and pictures in Word Processing documents.	**Inserting Symbols and Pictures in Word Document.**	Guide students to insert symbols and pictures.	

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UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5 CREATING BUSINESS DOCUMENTS **UNIT 6 MERGING DATA**	The student will be able to: 4.5.1 create business documents. 4.5.2 use layout techniques in document creation. 4.5.3 Inserting headers and footers. 4.6.1 merge data in document creation	**Creating Business Documents e.g.** • Different types of letters, • Memos • Reports. • Circulars • Creating Forms. etc **Layout Techniques.** • Multiple columns • Tables manipulation • Inserting Borders & Shading. • Merging Documents. . • Standard Paragraphs. **Inserting Headers and Footers** **Merging Data:-** • Addressing Envelopes & Labels. • Working with Long Documents • Inserting Table of Contents. • Creating an Index. • Creating auto text • Merging document etc	Assist students to create business document. Assist students to apply the different layout techniques to create business documents Guide students to insert header and footer in the document created Demonstrate how data is merged in document creation. Example 1 <u>Addressing envelopes</u>. – 1. Position the cursor on the recipient's address **2.** Click on **Tools** Click on **Letters and Mailings** . Selects **Letters and Labels (** the address will be highlighted in the dialogue box that will appear 5. Select envelope and other options you wish to apply such as sender's address 6. Insert envelop in the printer and Click on	**Project work** Duration for submission: 1 week Students should produce hardcopy for assessment.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	The student will be able to:		Example 2. Inserting table of content • Place the cursor where you want to insert the table of contents. • Click **Index and Tables** (or **Reference**, then Index and Tables) from the Insert menu • Select **Table of Contents** tab, and then select the style you want • Click on OK to insert the table of contents into your document	
UNIT 5 PRINTING	4.5.1 print documents using the various print options.	**Printing Word Documents with Various Print Options.** **Printing of Documents Using Printing Options e.g.** • Printing odd pages only • Printing even pages only • Printing a defined selection • Printing a defined number of pages per sheet	Guide students to: • preview documents • print documents with various options e.g. Page range, No. of copies, Collate Assist students to develop a simple brochure for the school using all the features they have learned. Assist students type and print a document using the different print options indicated in the content	**Practical Activity:** Student to type and print a report on a given topic and apply all the formatting and the editing tools.
UNIT 6 PRACTICAL ACTIVITY	4.6.1. create document on given topics	**Creating Document - (Report typing) on a given topic**. e.g. • What is ICT? • What are benefits of ICT to learning? • ICT and the Youth • HIV/AIDS and the Youth • Regenerative Health	Give students a topic to research on, type and submit for assessment	

SENIOR HIGH SCHOOL - YEAR 2

SECTION ONE

THE INTERNET

General objectives: The student will
1.   acquire skills in the use of the Internet
2.   appreciate the importance of using the internet.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 **THE INTERNET**	The student will be able to: 1.1.1 explain basic concepts, requirements and terminologies of internet.	**Concept, Requirements and Terminologies** • chats • discussions boards • www (world wide web) • html (hypertext Markup Language) • http (hypertext transfer protocol) • ftp (*f*ile *t*ransfer *p*rotocol)*,* • URL (Uniform Resource Locator) • Search engines • Download/Upload etc	Discuss the World Wide Web (www) and other internet protocols, including definitions of related terms	
	1.1.2 discuss the basic requirements for internet connectivity	**Basic Requirement for Internet Connectivity** e.g. • Computer, Mobile phone • Telephone line and Modem- (if dial-up) • Internet Service Provider (ISP) •	Lead students to discuss the requirements for internet connectivity	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1(CONT'D) **THE INTERNET**	The student will be able to: 1.1.3 identify the features of browser window	**Features and Uses of Browser Window:** • Address bar • History • Bookmarks/Favourites • Standard bar etc	Identify and discuss the features of the browser window	
	1.1.4 browse the internet with the help of some features of the Browser window.	**Browsing the internet with the help of some features of browser window** e.g. • Address, standard and formatting bars, URLs	Assist students to browse the internet with the help of the features of the Browser window	**Group Work:** In groups of 4, develop rules and regulations for the use of Internet in the computer lab.
	1.1.5 apply the rules and regulations in the use of the internet.	**Rules and regulations in the use of the internet (Netiquette)** – spam- unsolicited mails, people's privacy, pornography, intellectual property rights etc.	In groups, students brainstorm to come out with rules and regulations for responsible use of the internet for class discussion **NOTE:** Teacher should emphasise the need for students to desist from visiting pornographic sites and intruding on people's privacy,	
UNIT 2 **USING THE INTERNET TO COMMUNICATE**	1.2.1 create e-mail account	Creating E-mail Account	Guide students to create e-mail	
	1.2.2 send and access e-mail messages	Sending, Accessing e-mail Messages	Students to compose, edit and send mail messages with emphasis on spell check	**Exercise:**
	1.2.3 attach documents to e-mail messages	Attaching documents to e-mail messages	Guide students to send and receive e-mail messages with attachments	1. Create an e-mail account and send a mail to your teacher and friends
	1.2.4 use internet social network to communicate.	**Using Internet Social Network to communicate** e.g Facebook Yahoo messenger Skype	Guide students to communicate using Internet social network.	2. Compose a message, attach a file and send the mail to your friend.

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UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3 **ACCESSING INFORMATION FROM THE INTERNET**	The student will be able to; 1.3.1 use Uniform Resource Locators (URLs) to access Information.	Using Uniform Resource Locators (URLs) to access Information	Guide students to use URLs (website address) to access information.	**Exercise:** Student to access information on a given topic using URLs and Search Engines
	1.3.2 use search engines to access information	**Using Search Engines to access Information.** **e.g.** • google search • yahoo search • ask search	Guide students to use Search Engines to access information	**Exercise:** Student to prepare Word document using the information accessed from the internet.
	1.3.3 download information from the internet.	Downloading Information From the Internet.	Assist students to download information from the internet.	
	1.3.4 transfer information from internet to a different Application e.g. Word Processing.	**Transferring information from the Internet to a Different Application** e.g. Word. Processing application	Guide students to access, copy and paste information from the internet to a different Application e.g. Word.	

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SENIOR HIGH SCHOOL - YEAR 2

SECTION TWO
SPREADSHEEET APPLICATION

General Objectives: The student will:

1. acquire basic skills in using Spreadsheet packages.

2. appreciate the importance of spreadsheet in data management.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 **INTRODUCTION TO SPREADSHEET APPLICATION**	The student will be able to; 2.1.1 identify Spreadsheet Packages. 2.1.2 explain the importance of Spreadsheet application in data management 2.1.3 explain related concepts and terminologies in Spreadsheet. 2.1.4 identify features in Spreadsheet application window. 2.1.5 identify types of data and state their uses.	**Spreadsheet Packages** e.g. Excel, Quatropro, Calc **Importance of Spreadsheet application in Data Management** **Related Concepts and Terminologies** e.g. • cell(s) • rows • columns • worksheet • workbook **Features in the Spreadsheet Window Tool Bars**: • formatting bar • standard bar • formulae bar • help facilities, etc **Types of Data and Their Uses** e.g. • number • date • text • currency	Discuss Spreadsheet Packages listed in the content. Lead students to discuss the importance of Spreadsheet application in data management at schools homes and offices Discuss related concepts and terminologies in Spreadsheet package Guide students to identify features of Spreadsheet window Assist students to discuss types of data, state their uses and practice.	**Exercise:** Students to label the features of a printed workbook <u>NB:</u> Teacher to capture a workbook, print and give to students to label.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 **CREATING AND SAVING WORKBOOK**	The student will be able to: 2.2.1 create and save Workbook.	**Creating and Saving Workbook**	Guide students to create and save workbook.	NOTE: Teacher to give students data to enter. **Assignment:** Populate data and do the following: - Find averages - Percentages
UNIT 3 **APPLICATION OF SELECTED FORMULA AND FUNCTIONS**	2.3.1 construct and insert simple formulae and functions.	**Constructing and Inserting Simple Formulae and functions**	Demonstrate and guide students to construct and apply simple formulae and functions. Assign students to apply simple formulae and functions. NOTE: Teacher should focus on: • Formula: operational signs – addition, subtraction, multiplication and division. • Functions: – average, autosum, percentage	
UNIT 4 **FORMATTING WORKSHEET**	2.4.1 format worksheet using formatting tools.	**Formatting Worksheet Using Formatting Tools**. e.g. • Change: column width row height • Insert: rows, columns, cells • Delete: rows, columns, cells • Merge cells • Merge and centre • Text wrap • Cell alignment	Demonstrate how to format a worksheet by changing column, width and row height for students to practice. Assist students to: insert and delete rows, columns and cells create their own worksheet and format by inserting, deleting and merging.	**Exercise:** Students to create their own worksheet and format by inserting, deleting, merging cells columns and rows

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5 **EDITING AND PRINTING WORKSHEET**	The student will be able to; 2.5.1 demonstrate skills in editing and printing a worksheet. 2.5.2 demonstrate skills in previewing and printing a worksheet.	**Editing and Printing Worksheet:** • check spelling • preview the layout • review page breaks • change page setup and sheet settings • set print option **Previewing and Changing Print Settings**	Guide students to edit and print worksheet by - checking spelling - reviewing layout - reviewing page breaks - changing page setup and sheet settings Assist students to set print options and print worksheet.	**Exercise:** Students to work on given data by doing the following: Check - Spelling - Preview the Layout - Review Page Breaks - Change page setup and sheet settings - Students to print data making use of the features in the print window, e.g. print settings, colour options, number of copies to print, selecting a printer, etc

SENIOR HIGH SCHOOL - YEAR 2

SECTION THREE

PRESENTATION APPLICATION

General Objectives: The student will:

1. acquire basic skills in developing presentations using Presentation Application

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 **INTRODUCTION TO PRESENTATION APPLICATION**	The student will be able to: 3.1.1 state the importance of Presentation application.	**Importance of Presentation Application**	Group students to discuss and report on the importance of Presentation application.	
	3.1.2 explain the principles for designing presentations	**Principles for Designing Presentations**	Discuss the principles for designing presentations.	
	3.1.3 explain the terminologies in presentation application	**Terminologies in Presentation Application** eg. • Master slide • Slide transitions • Slide show etc.	Assist students to list and explain the terminologies used in Presentation application.	
	3.1.4 identify the commonly used features of a Presentation application in development of presentations.	**Identification of Commonly Used Features of Presentation Application Window** e.g. ▪ Toolbars ▪ Different presentation view modes, views – slide, slide sorter, outline	Guide students to open Presentation application window, identify and discuss its features.	
	3.1.5 demonstrate the use of the Help facility in Presentation application.	**The Use of the Help Facility in Presentation Application**	Assist students to demonstrate the use of the Help facility.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 **CREATING A PRESENTATION** **UNIT 3** **EDITING AND FORMATTING TEXT INPUT IN SLIDES**	The student will be able to: 3.2.1 create and save presentations using a template. 3.2.2 create and save a presentation using auto wizard. 3.2.3 add new slide(s) to presentation. 3.3.1 edit text input in slides. 3.3.2 format text input in slides.	**Creating and Saving a Presentation Using a Template** Creating and saving a presentation using auto content wizard **Adding new Slide(s) to an Existing Presentation** **Editing Text Input in Slides** e.g. notes pages, comments etc. **Formatting Text Input in Slides by**: ▪ Changing text appearance: e.g font sizes, font types etc. ▪ Applying text formatting such as: bold, italic, underline and case changes to text. ▪ Applying different colours and shadow to text. ▪ Aligning text: left, centre, right in a slide. ▪ Adjusting line spacing before and after bulleted and numbered points.	Assist students to create and save presentation using a template. Assist students to create and save presentation using auto content wizard. Guide students to apply the skills learnt in saving document to save presentation. **NOTE**: Teacher should encourage group work. Guide students to add new slides to existing presentation. Let students open the file created and assist them to apply their editing skills in editing text input in the slides created. Guide students to format text input in slides. Students to format their slides using the formatting tools indicated at the content column. Let students save their edited and formatted slides.	**Exercise:** Use the auto wizard to create the following: ● Certificate ● Simple business proposal

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4 **WORKING WITH OBJECTS, IMAGES AND PICTURES IN A PRESENTATION**	The student will be able to: 3.4.1 insert objects, images and pictures into a presentation.	Inserting Objects, Images and Pictures into a Presentation.	Let students open their existing files and assist them to: • take pictures or download pictures and images from the internet, • scan pictures • copy pictures and images from a file into the presentation.	**Exercise** Students to insert objects, images and pictures from the Clip Art into their presentation.
	3.4.2 edit inserted objects, images and pictures in a presentation.	Editing Inserted Objects, Images and Pictures in a Presentation.	Guide students to edit inserted objects, images and pictures by resizing them in their presentation.	
UNIT 5 **RUNNING A SLIDE SHOW**	3.5.1 run slide show.	**Running a Slide Show.** ▪ View different presentation ▪ View modes views e.g. slides, slide sorter, outline, notes page and slide show	Guide students to preview the slides they have created and make any necessary changes. Let students run their presentations using the slide show view.	
UNIT 6 **DEVELOP PRESENTATION ON A GIVEN TOPIC**	3.6.1 develop a presentation on a given topic	**Developing Presentation on selected Topics** e.g. • What is ICT? What are the benefits of ICT to learning? • ICT and the Youth • HIV/AIDS and the Youth • Regenerative Health	Give students some topics to develop a presentation as a project work. Teacher should encourage group work	**Project work** Develop a presentation on any one of the given topics and present to class.

SENIOR HIGH SCHOOL - YEAR 2

SECTION FOUR

PRESENTATION APPLICATION - MASTER SLIDES

General Objectives: The student will:
1. acquire basic skills in working on master slides and delivering presentations.

2. acquire the skills in developing organisation chart

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 **THE MASTER SLIDES**	The student will be able to: 4.1.1 identify types of master slides.	**Types of Master Slides:** ▪ Slide Master ▪ Handout Master ▪ Notes Master	Discuss with students the types of Master slides for students to practice.	**Exercise** Students to create a slide presentation on a topic. e.g.
	4.1.2 format text input in master slides.	Formatting Text Input in Master Slides.	Guide students to select the 3 master slides and format the text.	Importance of ICT to teaching and learning.
	4.1.3 insert and edit pictures, images, drawn objects on a Master slide.	Inserting and Editing with Pictures, Images, Drawn Objects on a Master Slide.	Assist students to look for pictures, images, objects etc. which suit their presentations, insert and edit in the master slides.	Students to apply all the skills learnt their work
	4.1.4 remove pictures, images, drawn objects from a Master slide	Removing pictures, Images, Drawn Objects from a Master Slide.	Assist students to delete unwanted pictures, images etc. in the master slides.	
	4.2.1 apply preset text, image animation effects to slides.	**Applying Preset Text, Image Animation Effects to Slides**. ● Change preset animation effects on text, images.	Demonstrate how to apply pretext text and animation effects to slides. Students to practise how to apply text and animation effects to slides.	
UNIT 2 **CUSTOMISING PRESENTATION**	4.2.2 apply transition effects between slides.	**Applying Transition Effects Between Slides**. ● Change slide transition effects between slides.	Guide students to apply transition effects between slides.	
	4.2.3 apply animation effect to slides in the normal view.	**Applying Animation Effect to Slides in the Normal View** ● animation – entrance etc.	Students to apply animation effect to slides in the normal view.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 (CONT'D) CUSTOMISING PRESENTATION \	The student will be able to: 4..2.4 apply animation in the slide sorter.	**Applying Animation in the Slide Sorter View** • animation – entrance Customs, emphasis, exit, motion paths.	Students apply animation to slider sorter Let students know the effects on some motion paths and transition on slide show and assist them in the selection taking into consideration the audience	<ins>**Exercise**</ins> Students to customize their presentation by applying the skills learnt.
UNIT 3 **DELIVERING A PRESENTATION**	4.3.1 explain the things to consider when delivering a presentation.	**Things to Consider Before Delivering Presentation.** • Understand how audience size, room size, room lighting impacts on planning of a presentation such as: need for a microphone, need for a projector, need to adjust contrast between background and data for legibility. • understand how audience's demography and knowledge of the subject affect the presentation. • Understand how choice of font colours may bring out different responses from the audience colour. • ensure clarity and accuracy of the content in the presentation	Discuss with students things to consider when delivering a presentation.	Teachers to introduce and give the topics of the term's project to students to start the research work

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UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3 **(CONT'D)** **DELIVERING A PRESENTATION**	The student will be able to:	• Understand some important planning and design concepts associated with delivering a presentation such as: - ensuring slides follow in a logical sequence, - tailor content to time available - consider likely attention span of audience - consider an appropriate time interval for each slide in a presentation.	Discuss importance of planning in delivering a presentation	
	4.3.2 edit presentation before delivering.	**Editing Presentation Before Delivering** • Spell-check a presentation and make changes such as: correcting spelling errors, deleting repeated words.	Let students edit presentation before delivering.	
	4.3.3 add presenter's notes to slides and delete unwanted slides.	**Adding Presenter's Notes to Slides and Deleting unwanted Slides.**	Assist students to add presenter's notes and delete unwanted slides.	
	4.3.4 apply transition effects on screen slide presentations.	**Apply Transition Effects on Screen Slide Presentations:** • Define and test time periods between slide presentation.	Guide students to apply transition effects to the presentation created. Assist them in timing the slide show, selection of pointer option and their effect on the screen presentation.	
	4.3.5 acquire show slides in a presentation.	**Skills in Showing Slides in a Presentation:** • The use of the screen menu • Selection of pointer option • preview slide show, start a slide show on any slide.	Demonstrate the skills needed in presenting slide to students. Let students practise the skills.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4 **PRINTING PRESENTATION**	The student will be able to: 4.4.1 change slide setup. 4.4.2 select print option for printing.	**Changing Slide Setup:** • slide orientation to portrait, landscape. • Change paper size. **Selection of Print Option** • Entire presentation, • Specific slides, • Handouts, • Notes pages, • Outline view of slides, • Number of copies	Discuss with students the slide setup Let students print their presentations. Guide students in the selection of the print options.	**Project Work** Teacher to give students the topics for their project work in Section 2 Unit 1 to start work on it.
UNIT 5 **DEVELOPING ORGANISATION CHART USING A PRESENTATION APPLICATION**	4.5.1 develop organisation chart with labeled hierarchy using a Presentation application. 4.5.2 change the hierarchical structure of an organisation chart.	Developing an organisation chart with a labeled hierarchy using a Presentation application. (Use a built-in organisation chart feature) **Changing the Hierarchical Structure of an Organisation Chart by**: • adding and removing - managers, co-workers and subordinates in an organisation chart.	Assist students to develop an organisation structure using the built-in organization chart Guide students to change the structure by adding and removing managers, co-workers, subordinates in an organisation	**Assignment** Students to develop the organisation structure of the school indicating the positions and titles.

SECTION FIVE

APPLICATION OF ICT LITERACY SKILLS
General Objectives: The student will:
1. apply the acquired ICT literacy skills in solving everyday challenges
2. use the acquired ICT literacy skills to enhance learning of other subjects
3. exhibit 21st century skills in academic and social life

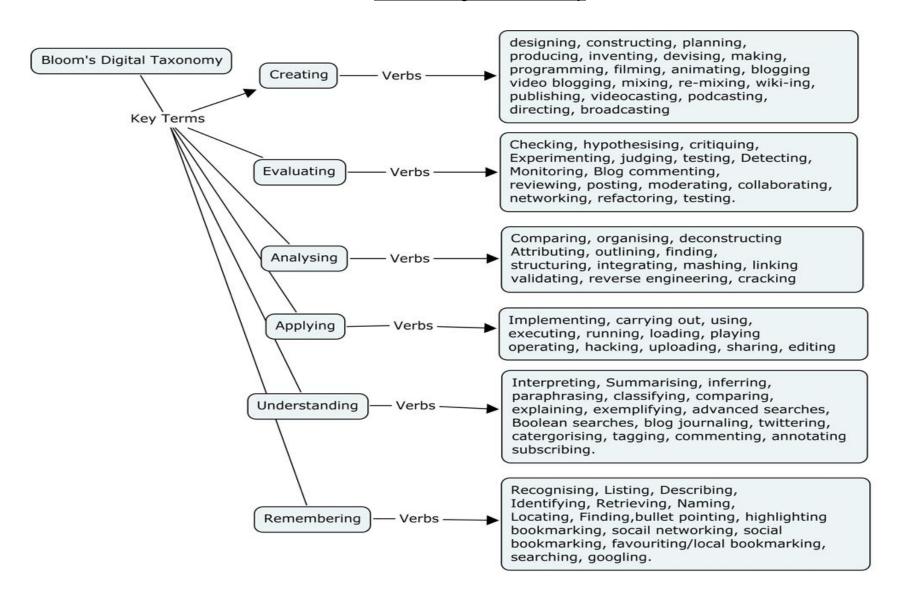| UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 PROJECT BASED ACTIVITIES	The student will be able to: 5.1.1 demonstrate 21st century skills applicable to project-based activities	**Twenty-first Century Skills application in Project-based activities.** e.g. • Collaboration • Communication • Self direction • Critical thinking • Problem Solving	Lead students to brainstorm the 21st century skills application to project-based- activities	Project: Conduct a research in a selected topic in any subject area and present a report panel. Examples: 1. Submit a well researched business proposal, complete with time line and budget. There should be a presentation to go along with the proposal.
	5.1.2 apply ICT literacy skills to conduct a research	**Applying ICT literacy Skills in Research Work** • Working with continuous text, working with numerical data, preparing data for presentation purposes, using information from the internet.	In groups of five, guide students to select and work on a project from a list of given projects by applying the following ICT skills: Saving, Formatting, Editing and Printing document. Note: Teacher to take into consideration topics from other subjects. Discuss with students and come out with rubrics for the projects. Students to research into the selected topic and write a report.	2. Prepare an action plan to conduct a field research on "Incidence of malaria case in my community'. The action plan should be accompanied by short abstract, budget and time lines. There should be a presentation to go along with the action plan. 3. Students to conduct an ecological experiment. to measure growth, population, migration, immigration. They are to use the appropriate application to i. make the appropriate recording and calculations

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 PROJECT BASED ACTIVITIES (CONT'D)	The student will be able to:		Students to apply the following applications in preparing the final report : 1. Word Processing 2. Spreadsheet 3. Presentation Note: Teacher to encourage students to apply 21st century skills as shown in Appendix C .	4. Record the weight and height of students over a period of time. Calculate the body mass index (BMI) and group students under various weight categories. Based on observation, write a paper on the causes and effects of body weight related issues and provide advice on how to maintain healthy body weight. There should be a presentation to go along with the paper. . ii. Write a report on the experiment. iii. Present the findings.

Year 1 (90 Periods)				Year 2 (90 Periods)				Year 3 (60 Periods)			
Section	**Unit**	**Suggested No. Of Periods Needed To Teach Unit**	**Total**	**Section**	**Unit**	**Suggested No. Of Periods Needed To Teach Unit**	**Total**	**Section**	**Unit**	**Suggested No. Of Periods Needed To Teach Unit**	**Total**
1	1	6		1	1	6		1	1	9	
	2	6			2	6			2	6	
			12		3	6			3	9	
2	1	6					18		4	9	
	2	6		2	1	6			5	6	
			12		2	3					39
3	1	6			3	3		2	1	6	
			6		4	3					12
4	All the units	45			5	3					
			45				18				
				3	1	6					
5	1	4			2	6					
	2	4			3	6					
			8		4	6					
					5	6					
					6	10	40				
				4							
					All Units	10	10				
Total Periods			83	Total Periods			86	Total Periods			51
Extra Left For Contingencies			7	Extra Left For Contingencies			4	Extra Left For Contingencies			9
Total			90	Total			90	Total			60

APPENDIX B

Blooms Digital Taxonomy

Bloom's Digital Taxonomy

Key Terms

Creating — Verbs →
designing, constructing, planning, producing, inventing, devising, making, programming, filming, animating, blogging video blogging, mixing, re-mixing, wiki-ing, publishing, videocasting, podcasting, directing, broadcasting

Evaluating — Verbs →
Checking, hypothesising, critiquing, Experimenting, judging, testing, Detecting, Monitoring, Blog commenting, reviewing, posting, moderating, collaborating, networking, refactoring, testing.

Analysing — Verbs →
Comparing, organising, deconstructing Attributing, outlining, finding, structuring, integrating, mashing, linking validating, reverse engineering, cracking

Applying — Verbs →
Implementing, carrying out, using, executing, running, loading, playing operating, hacking, uploading, sharing, editing

Understanding — Verbs →
Interpreting, Summarising, inferring, paraphrasing, classifying, comparing, explaining, exemplifying, advanced searches, Boolean searches, blog journaling, twittering, catergorising, tagging, commenting, annotating subscribing.

Remembering — Verbs →
Recognising, Listing, Describing, Identifying, Retrieving, Naming, Locating, Finding,bullet pointing, highlighting bookmarking, socail networking, social bookmarking, favouriting/local bookmarking, searching, googling.

Source: Churches A, 2007, Edorigami, blooms taxonomy and digital approaches
http://edorigami.wikispaces.com/Bloom%27s+and+ICT+tools

21st Century Skills

The 21st century skills as identified by the Partnership for 21st Century Skills[1]

LEARNING AND INNOVATION SKILLS

Creativity and Innovation
- Demonstrating originality and inventiveness in work
- Developing, implementing and communicating new ideas to others
- Being open and responsive to new and diverse perspectives
- Acting on creative ideas to make a tangible and useful contribution to the domain in which the innovation occurs

Critical Thinking and Problem Solving
- Exercising sound reasoning in understanding
- Making complex choices and decisions
- Understanding the interconnections among systems
- Identifying and asking significant questions that clarify various points of view and lead to better solutions
- Framing, analyzing and synthesizing information in order to solve problems and answer questions

Communication and Collaboration
- Articulating thoughts and ideas clearly and effectively through speaking and writing
- Demonstrating ability to work effectively with diverse teams
- Exercising flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
- Assuming shared responsibility for collaborative work

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- Accessing information efficiently and effectively, evaluating information critically and competently and using information accurately and creatively for the issue or problem at hand
- Possessing a fundamental understanding of the ethical/legal issues surrounding the access and use of information

Media Literacy
- Understanding how media messages are constructed, for what purposes and using which tools, characteristics and conventions
- Examining how individuals interpret messages differently, how values and points of view are included or excluded and how media can influence beliefs and behaviors
- Possessing a fundamental understanding of the ethical/legal issues surrounding the access and use of information

ICT (Information, Communications and Technology) Literacy
- Using digital technology, communication tools and/or networks appropriately to access, manage, integrate, evaluate and create information in order to function in a knowledge economy
- Using technology as a tool to research, organize, evaluate and communicate information, and the possession of a fundamental understanding of the ethical/legal issues surrounding the access and use of information

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- Adapting to varied roles and responsibilities
- Working effectively in a climate of ambiguity and changing priorities

Initiative and Self-Direction
- Monitoring one's own understanding and learning needs
- Going beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise
- Demonstrating initiative to advance skill levels towards a professional level
- Defining, prioritizing and completing tasks without direct oversight
- Utilizing time efficiently and managing workload
- Demonstrating commitment to learning as a lifelong process

Social and Cross-Cultural Skills
- Working appropriately and productively with others
- Leveraging the collective intelligence of groups when appropriate
- Bridging cultural differences and using differing perspectives to increase innovation and the quality of work

Productivity and Accountability
- Setting and meeting high standards and goals for delivering quality work on time
- Demonstrating diligence and a positive work ethic (e.g., being punctual and reliable)

Leadership and Responsibility
- Using interpersonal and problem-solving skills to influence and guide others toward a goal
- Leveraging strengths of others to accomplish a common goal
- Demonstrating integrity and ethical behavior
- Acting responsibly with the interests of the larger community in mind

Source: Partnership for 21st Century Skills (www.21stcenturyskills.org).